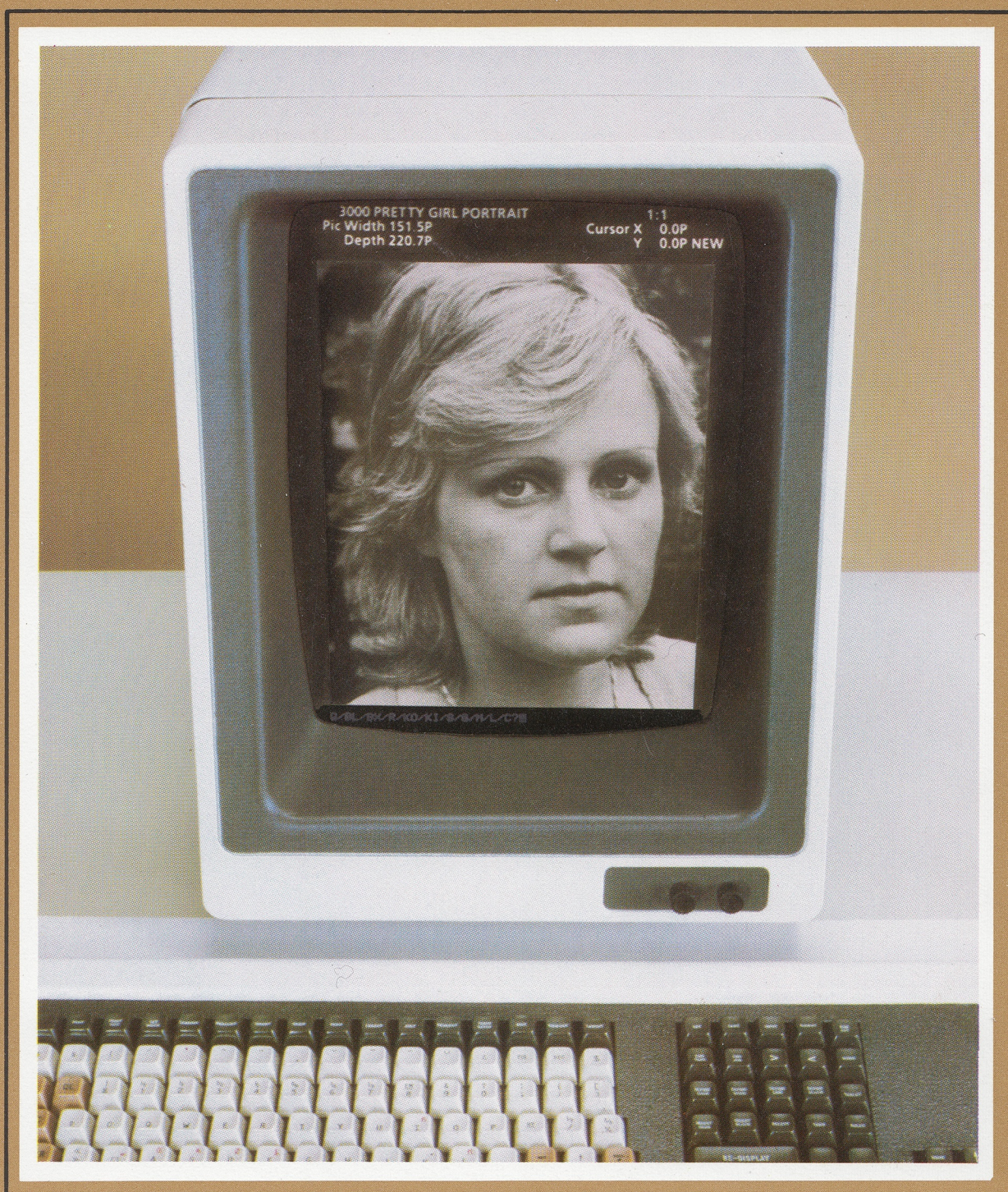


Graphic System



Technically speaking even the very best text generation/editing systems have always had their limitations.

They're called halftones and linework.

Yet very few publishers can manage without them.

That's what makes our Linotype-Paul Graphic System such a valuable new breakthrough – for it enables halftone and linework content to be digitised, stored, recalled and modified, prior to typesetting directly alongside text output of up to full page tabloid size.

Without the delays of process camera and paste-ups.

And it has many other operational advantages as well, for both large on-line users and smaller off-line applications.

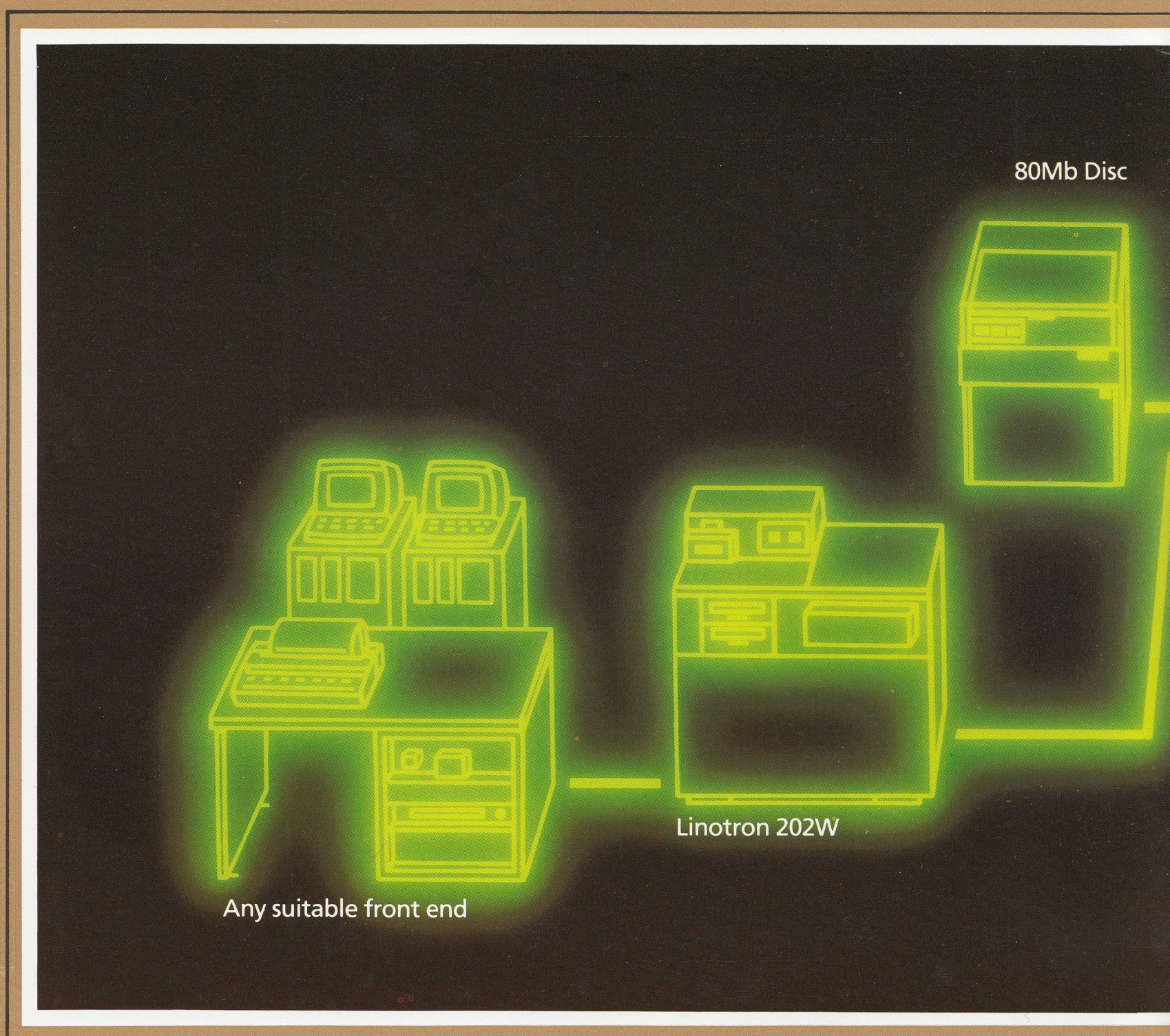
Digitising halftones allows instantaneous adjustment of highlights, mid-tones, and shadows to compensate for the screening process or poor originals.

Special techniques are used to change the shape and position of dots in areas of high contrast, and improve the perceived sharpness of halftone images.

And linework too has not been forgotten – for the Graphic System has four options where increased disc storage enables increased accuracy of output – as well as the potential to produce pseudo linework from halftone originals.

In addition pre screened originals may be digitised as line work.

Linotype-Paul



The input device to the System is the Linotron Digitiser which uses laser technology to scan an original graphic contone prescreened halftone or linework – and output the data in a form suitable for input to the Graphic System and subsequent assessment via the Terminal.

The interactive display enables modification of both halftone and linework graphics stored on disc to proceed without the need for intermediate proofing.

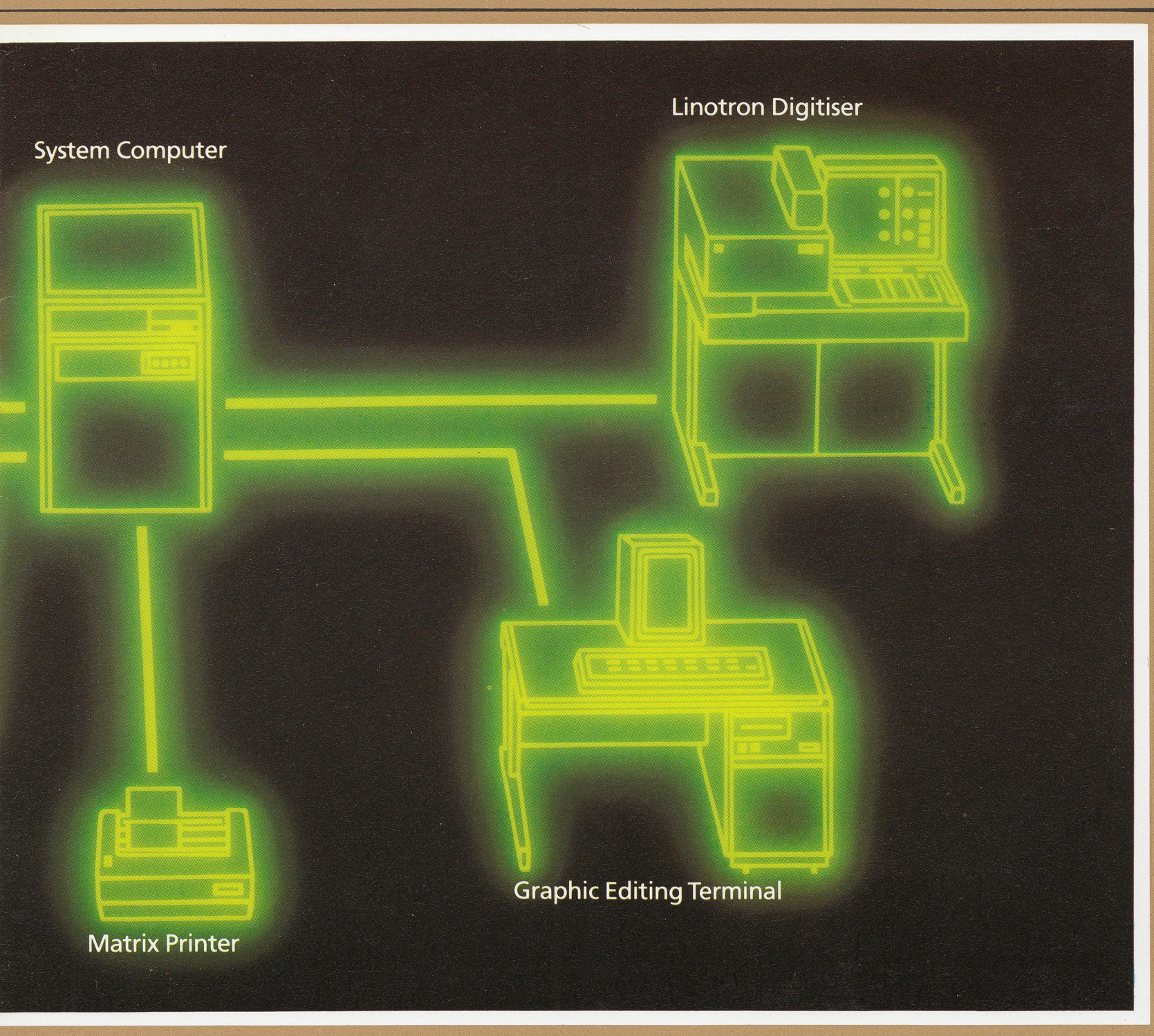
During the process the System can change negatives to positives, or vice versa; and change right to wrong reading.

Picture storage is on one or more S.M.D. drives using exchangeable disc packs—with disc capacity being in multiples of 80Mb or 300Mb, and data compression techniques being used to make the most efficient use of disc space available.

Finally graphics are typeset on the Linotron 202 and can be freely mixed in any combination of halftone, linework and text—with halftone screens of 70, 85, and 115, all at 45°—promising a range of good quality output for newspaper and magazine work.

The system can simultaneously digitise one graphic while outputting another and printing directory listings.

Note too that up to two Linotron 202 units can be supported by a single Graphic System—enabling even greater flexibility of application and output—whilst the incorporation of a Linoscreen Composer into the total system allows complete page make-up for display ads and editorial matter.



Terminal

The Graphic Editing Terminal consists of a Visual Display Screen, detachable keyboard and 'lowboy' computer/disc unit. It is ergonomically designed for operator comfort.

The interactive display of the Graphic Editing Terminal is designed to visually present graphics stored on the data base in a form in which an operator can modify and adjust them instantaneously in real time, without the need for confirmatory proofing.

In addition the display screen has at the top four lines of text to keep the operator informed of terminal status and picture parameters – plus a single line at the base to assist in identifying operational options during keyboard work.

At all times modifications to a picture displayed on the Terminal are reversible until the picture is filed back to the data base—where it is stored separately from the original, allowing both to be available for future use as required.

The Graphic Editing Terminal can also give full directory information relating to the size and identification of all linework and halftones stored.

As a digitiser and picture processor alone the Linotype-Paul Graphic System could prove invaluable to many organisations.

But it is in the range of picture modifications available that the System really comes into its own.

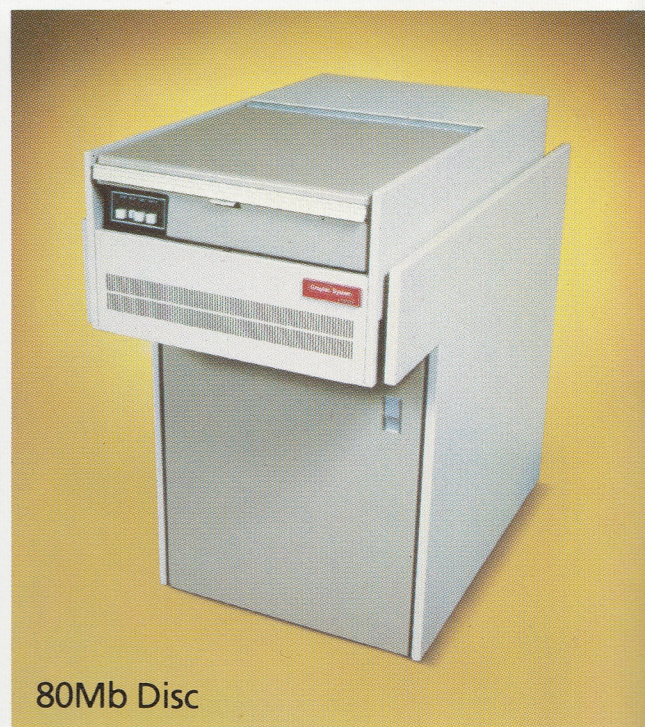
Perhaps its most valuable feature is the ability to select and display part pictures in detail at higher magnification prior to modification.

For at any size the grey scale may be interactively modified at no fewer than five points: black; shadow midtone; highlight; and white – enabling the most important part of a picture to be shown to best advantage without the need for re-scanning or proofing.

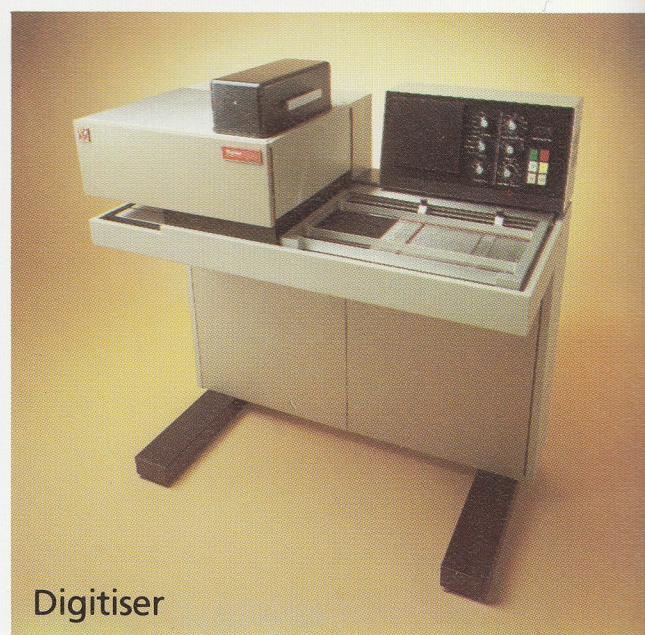
All pictures may be displayed in right or wrong reading – and the Terminal provides facilities for the



Graphic Editing Terminal



80Mb Disc



Digitiser

electronic cropping of graphics both inside and outside the displayed shape.

During grey scale modifications the original curve is retained—with immediate switching between old and new to allow comparison. Graphical displays of both curves are available.

Special effects such as posterisation and positive negative switching are available from the keyboard—with pseudo linework generation from halftones available by invoking a variable threshold value to set the change point from black to white.

Other invaluable operating features include a switchable full screen cross wire cursor, screen edge ruler scales for accurate cursor positioning and spot density measurement at the cursor.

Linotron Digitiser

The Linotron Digitiser provides the input to the Graphic System.

Photographs or line drawings are scanned by laser and the data transmitted to the Central Processor.

Positive, negative, right reading and wrong reading switching facilities are available at the input stage together with adjustments to highlights, midtones, shadows and sharpness as required.

Maximum input on the Digitiser scanning bed is 12" x 24" of photographic or linework.

Disc Storage

Storage on the Graphic System is extremely flexible and offers the user the choice of 80Mb or 300Mb discs with up to four on line.

Having more than one disc drive allows greater storage capacity and security back up facilities, whilst the removable and exchangeable disc packs allow for archiving.

By using advanced data compression methods a large amount of data can be stored in these handy and convenient forms.



Linotron 202W



Matrix Printer



System Computer

Linotron 202

The Linotron 202 is the perfect complement to the Graphic System, providing high quality typographic setting in a point range size from 4½ pt. to 96 pt. with Superfonts. Output can be in galley form, copyfitted articles or fully composed pages up to 70 picas wide.

Typefaces available are from the exclusive Mergenthaler, Haas, Stempel and Linotype range which currently offers well over 1,000 different typefaces in readily available disc form.

Line Printer

A small table-top line printer of the matrix impact type can be added to the Graphic System to give greater user flexibility regarding outputting directory information, showing picture identifying number, width and depth, storage requirement, digitising screen and slug names.

Particularly valuable for users with a high turnaround of pictures, the Line Printer gives rapid access to stored system information.

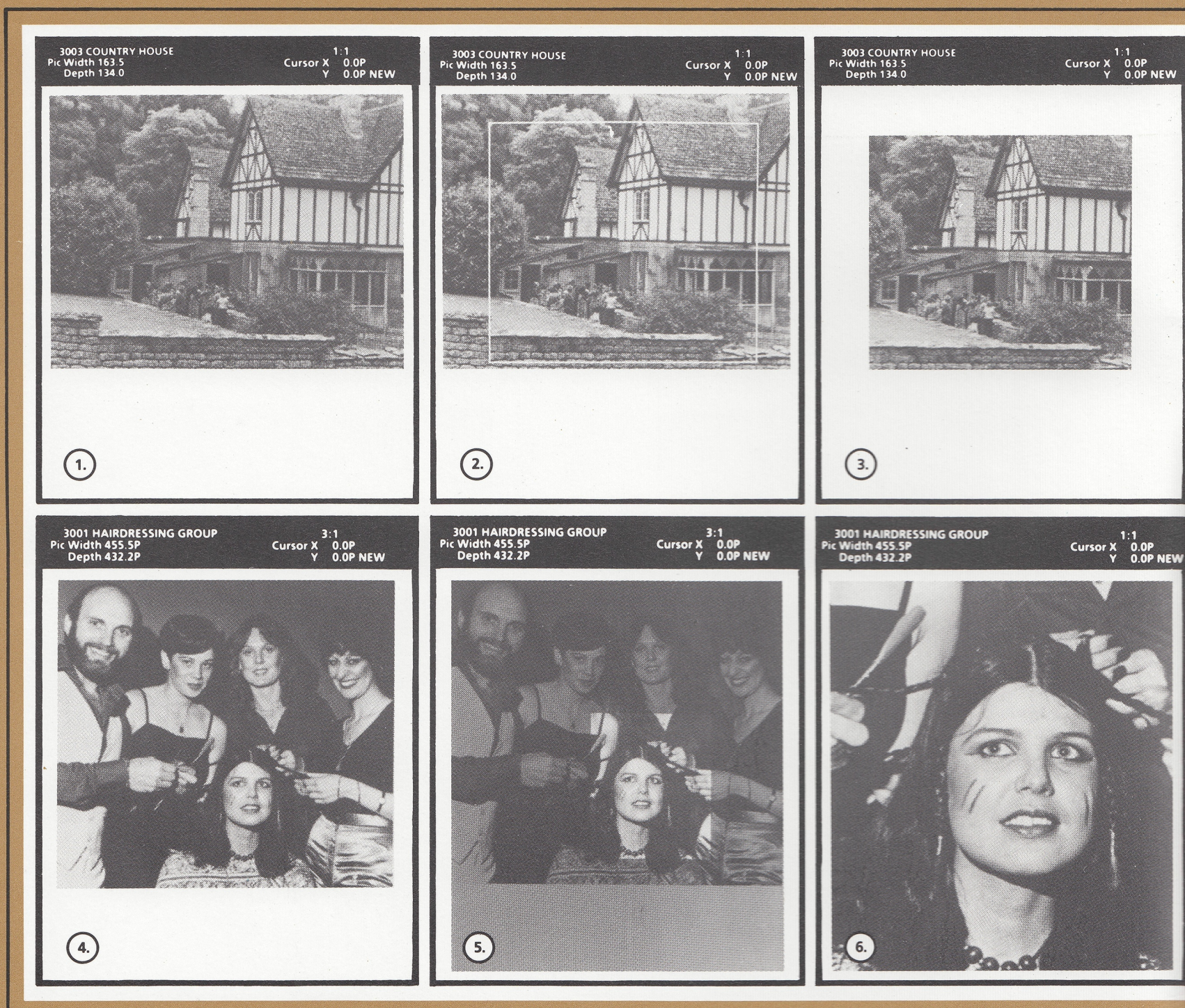
Linotron Composer

Designed to permit on-screen composition of text

and display headings, and illustrative and logotype elements, the Linotron Composer can be used with the Graphic System to provide a complete composition facility including halftones and linework. Text is shown in real point sizes and in its true position – and because the Composer works in real time, blocks, text and headlines can be instantly repositioned for alternative layout treatments, to provide an unrivalled speed and economy of page layout for advertising material and all kinds of display matter.

The Graphic System is just one of scores of high technology products manufactured in Britain by Linotype-Paul, for the printing and publishing industries of the world.

At every stage from initial assessment, through to installation, servicing, and system upgrading, Linotype-Paul have the skills and knowledge to save valuable time and resources – and the personnel to help at every level from operator training through to systems analysis.



1. The operator displays a complete picture on the terminal's screen. The picture number, name and dimensions are displayed in the information display area along with the terminal's status.

2. A cropping outline is superimposed on the picture and adjusted in size and position to frame the required subject.

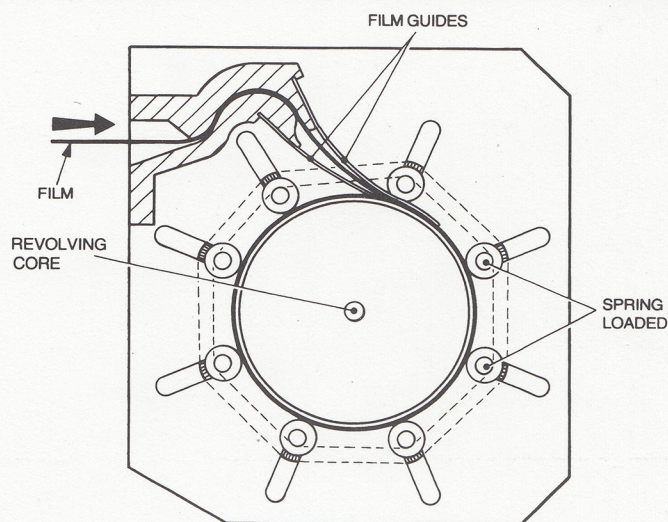
3. The unwanted area of the picture is suppressed from the screen by a single keystroke to allow assessment of the crop. If it is not satisfactory the suppressed area can be reinstated instantaneously and an alternative crop tried. When the operator is satisfied the picture is filed back to the disc.

Proofing is not necessary since the picture area left on the screen is exactly what will be typeset on the Linotron 202.

4. The operator displays a complete picture on the screen. The information display area again shows picture and terminal status.

5. The most important area of the picture is selected for closer inspection.

6. The chosen area is displayed at full screen size giving the operator a larger image on which to assess picture quality. In this case the grey scale would be modified to show the girl's hair to best advantage. When the operator is satisfied the picture is filed back to disc. Proofing is not necessary since the grey scale changes made at the terminal will be duplicated in the typeset output.



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The picture of the house above was stored and output at 115 l.p.i. A Single 80Mb disc can store 380 such pictures. A 300Mb disc can store 1485 such pictures. Disc capacities for other screen rulings are shown below.

Number of this picture that could be stored on Disc.	Disc	
	80Mb	300Mb
115 l.p.i.	380	1485
85 l.p.i.	670	2610
70 l.p.i.	1035	4030

The line diagram above was stored and output at full resolution raster. A single 80Mb disc can store 625 such pictures, a 300Mb can store 2,430. Disc capacities for other line drawing resolutions are shown below.

Number of this graphic that could be stored on Disc.	Disc	
	80Mb	300Mb
Full resolution raster	625	2430
Half resolution raster	1610	6280
Fine linework	2400	9360
Normal linework	6370	24810

The number of pictures that can be stored varies with size. For example the discs will hold twice the number if the area is halved.

Graphic System

Specifications

Input

From Linotron Digitiser
Screened or Non-screened photographic prints and line art up to 12" x 24".
Machine switchable on input:
Positive right reading
Positive reverse reading
Negative right reading
Negative reverse reading.
Adjustments on input to:
Highlights
Midtones
Shadows
Sharpness

Output

On Linotron 202

Maximum output picture sizes from 202 Graphic System

Screen	Width (mm)	Depth (mm)
115 l.p.i. halftone	160	320
85 l.p.i. halftone	213	426
70 l.p.i. halftone	267	534
Full resolution raster	213	426
1/2 Resolution raster	426	852
Fine linework	106	212
Standard linework	213	426

Magnification ranges of picture output with respect to input

Screen	Max. %	Min. %
115 l.p.i. halftone	110	11
85 l.p.i. halftone	147	15
70 l.p.i. halftone	184	19
Full resolution raster	147	15
1/2 Resolution raster	295	30
Fine linework	74	7.5
Standard linework	147	15

Mixing between linework, graphics output and typographic text.
Screen changing between 70, 85 and 115 lines per inch of previously stored data. Overall size will increase/reduce in proportion.

Storage

Magnetic disc storage
Single or Multiple disc storage. Multiple drives offer greater storage capacity and back up facility.
A maximum of four discs may be connected to either 80Mb or 300Mb, giving the following capacities: 80Mb, 160Mb, 240MB, 320Mb, 300Mb, 600Mb, 900Mb, 1200Mb.

Picture Editing

Picture Editing is interactive and reversable at the editing terminal. The original picture is retained on the data base.

Line Printer

The Line Printer option is of the matrix impact type and is offered for directory reporting on the Graphic System.

On Line

The Graphic System is connected directly to the Linotron 202 phototypesetter. Page assembly is by Linoscreen Composer or central typesetting system – both connecting directly to the 202.

Environment

Temperature: 68°F ±5°F (20°C ±3°C)
Relative Humidity: 50% ±10% (non condensing)

Power Requirements

Single phase 115/240V, 60/50 Hz ±10%



These specifications are subject to change without notice.
Linoscreen and Linotron are UK Registered Trade Marks.

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